FILE NAME: Chemical Abstracts (CHAB)

DATE: 1955

DOC#: CHAB038

OCUMENT DESCRIPTION: Abstract Originally Published in 1955 by Doll

Research Inst., Tokyo). *J. Chem. Soc. Japan*, Ind. Chem. Sect. **57**, 781–4(1954).—The catalytic activity of Ni on 2 kinds of Al_2O_3 carrier was examd. for the synthesis of ethylamine. The specific surface area and pore dimension distribution were measured by CO_2 adsorption and Hg replacement, resp. H adsorption characteristics at −100 to +500° was also studied. The activity showed a max. at approx. 8% Ni content. The results indicate that the most active Ni catalyst has an intermediate cryst. size on the carrier surface. Katsuya Inouye

Connection between activity, structure, and acidity of magnesium silicate catalysts. N. A. Danilova. *Trudy Inst. Khim., Akad. Nauk Azerbaĭdzhan. S.S.R.* **13**, 38–47 (1954)(in Russian).—MgO-SiO_2 catalysts, prepd. by copptn. (liquid glass mixed with $MgSO_4$ soln.) with different concns. of the reactants, were examd. as to properties. While the chem. compn. as such was substantially const. for the series, the phys. properties (apparent d., porosity) showed considerable differences, differences which were also reflected in their cracking activity in gasoline formation. The difference in activity was primarily a function of porosity. No direct relation was found between acidity and activity. Catalysts prepd. from more concd. solns. were more stable at high temp. Thus the thermal deactivation results not only from structural change by H_2O loss from a chemically bound form but also from alteration of the actual porosity. G. M. Kosolapoff

A highly active nickel hydrogenation catalyst. W. Langenbeck, H. Dreyer, and D. Nehring (Deut. Akad. Wiss., Berlin). *Naturwissenschaften* **41**, 332(1954).—Highly active Ni catalysts are made by decompn. of mixed Ni and Mg oxalates. A soln. of 25 g. $Ni(NO_3)_2.6H_2O$ and 225 g. $Mg(NO_3)_2.6H_2O$ in 600 cc. water is pptd. at 50° with a soln. of 122 g. $(CO_2H)_2.2H_2O$ in 500 cc. water. The mixed crystals contain 23.9 mole % Ni oxalate and 76.1 mole % Mg oxalate. After heating 4 hrs. at 350° in a H_2 current a black pyrophoric powder results contg. Ni and undecompd. Mg oxalate. It hydrogenates 5 cc. cyclohexene in 35 cc. benzene at room temp. and atm. pressure in 15 min., one fifth the time required with Raney Ni. The rigid Mg oxalate skeleton probably contributes to the quality. B. J. C. van der Hoeven

Industrial atmosphere. V. Formaldehyde in the atmosphere of working environment. J. Roubal, J. Zdrazil, and F. Picha. *Pracovní Lekarství* **4**, 283(1953); *Public Health Eng. Abstr.* **33**, No. 8, 5; cf. *C.A.* **45**, 285*h*.—The source of contamination of the air in work places where glues with a HCHO-urea base are used is to be found in the free HCHO contained in resins. Quantities of 0.56 to 1.4% of free HCHO were found in glues examd. Technicians maintain that the use of glues which do not contain free HCHO is not practicable. Where resins are produced, it is necessary to provide good ventilation. Free HCHO remains for a long time on objects stuck together with synthetic glue or coated with a resin-contg. paste. Sites where such material is worked should contain adequate ventilation. It is best to use gas masks or respirators in places where HCHO is used in spraying hides for tanning. R. D. H.

Poisoning occurring during the manufacture of bromochloromethane. T. Hirokawa, I. Yokoyama, T. Ishikawa, and A. Kurisu. *Bull. Inst. Public Health* (Tokyo) **2**, No. 2, 1–3(Sept., 1952); *Public Health Eng. Abstr.* **33**, No. 12, 16(1953).—Clinical descriptions of 3 cases of poisoning during manuf. of CH_2BrCl were given. No precautions were taken against extensive leakage from app. in which MeCl and MeBr were mixed to produce the required reaction producing the final product. The final product and (or) MeCl were presumed to have caused the damage to circulatory system, liver, and nervous system. R. D. H.

Mortality from lung cancer in asbestos workers. Richard Doll (Med. Research Council, London). *Brit. J. Ind. Med.* **12**, 81–6(1955).—Among 105 persons who had been employed at one asbestos (I) works, and for whom the cause of death was detd. at autopsy, 18 showed lung cancer. Of these 18, 15 also showed asbestosis; these 15 had started employment in the industry before 1923 and had worked at least 9 yrs. before dust-control regulations had become effective. Among 113 men who had worked at least 20 yrs. in places where they were liable to be exposed to I dust, there were 11 deaths from lung cancer, 22 deaths from other respiratory and cardiovascular diseases, and 39 deaths in all, as compared with expected no. of 0.8, 7.6, and 15.4, resp.; all cases of lung cancer were assocd. with asbestosis. Conclusion: Lung cancer was a specific industrial hazard of certain I workers. The risk has become less as the duration of employment under the old dusty conditions has decreased. Marion Horn Peskin

Burton's lead line at the gums in workers affected by lead poisoning. Darió Gallo (Univ. Milan). *Med. lavoro* **46**, 39–45(1955).—The various parts of the Pb seam in lead poisoning are described. A. E. Meyer

Lead excretion of lead hardeners in a modern Swedish tool factory. K. G. Rignér, S. G. Sjöberg, O. Sjoholm, and R. Verterberg. *Nord. Hyg. Tidskr.* **1953**, 41–7; *Public Health Eng. Abstr.* **33**, No. 12, 11.—In lead hardeners the amount of lead in the urine was higher than that of a control group. The porphyrin contents of the urine and the basophilic-aggregate values of the blood were on the same level as those of the control group. The exposure did not cause any evident symptoms of lead poisoning. R. D. H.

Two cases of lead poisoning in stonemasons. M. Oltramare. *Z. Unfallmed. u. Berufskrankh.* **45**, 282–8(1952); *Public Health Eng. Abstr.* **33**, No. 10, 9(1953).—Some 50 years ago it was customary in Switzerland for many stone-built houses to be coated with layers of white lead. Pb intoxication contracted by two stonemasons in the process of renovating such buildings is described. Clinical and lab. findings for the 2 men were, resp., as follows: hemoglobin 61, 70%; blood urea 50, 44 mg./100 ml.; blood lead 140, 122 γ/100 ml.; and urinary coproporphyrin concn. 1350, 450 γ/24 hrs. R. D. H.

The content of silica in the blood and urine of workers in dust-creating industries. R. Yu. Govorchuk (Ukraïn. Inst. Ind. Hyg. and Occupational Diseases). *Bor'ba s Silikozom, Akad. Nauk S.S.S.R., Sbornik Statei* **1953**, 309–11.—The presence of SiO_2 up to 10 mg. % in the blood and up to 20 mg. % in the urine is to be regarded as normal. Inhalation of free SiO_2 by the lungs increases its content in the blood and urine. No parallelism was discerned between the stages of progressive lung silicosis and the SiO_2 content of the blood or urine. The erythrocyte sedimentation rate tends to increase as the SiO_2 blood content is increased. B. S. Levine

---

Analysis of phenols [in industrial effluents] (Commins) 7. *Patent:* Manuf. of silicone polymers without hydrolysis [for brake systems] (Guillissen) 31.

Catalyst. Mitchell S. Bielawski (to Universal Oil Products Co.). U.S. **2,704,747**, Mar. 22, 1955. A solid catalyst is manufd. by (1) mixing over 50% by wt. of a phosphoric acid, a siliceous adsorbent, and about 0.5 to 10% by wt. of a Co oxide, hydroxide, or salt; and (2) drying and calcining the resultant mixt. The catalyst prepd. in this manner is active in promoting org. reactions, such as the polymerization of olefins. P. J. Wilson, Jr.

Magnesia-calcium oxide-silica composites. Wm. A. Pardee and Geo. E. Elliott, Jr. (to Gulf Research & Development Co.). U.S. **2,706,168**, Apr. 12, 1955. A MgO-CaO-SiO_2 composite contg. about 1–18% CaO is subjected to the action of satd. steam at 250–600°F. and calcined. The lower temp. is used for a low-CaO and the higher temp. for a high-CaO composite. Examples are given showing that steaming results in a composite of increased d. and catalytic cracking activity. N. E. J.

Improving the activity of chlorite solutions. Deutsche Gold- und Silber-Scheideanstalt vorm. Roessler (Hermann Baier, inventor). **Ger. 826,437**, Jan. 3, 1952 (Cl. 8*i*, 2). Salts (I) of bi- or trivalent metals, such as Cu, Al, Mg, Ca, or mixts. thereof, are added to an acid chlorite soln. (II) to improve its activity in bleaching, sterilizing, pest control, etc. The quantity of I added should amount to at least 0.01 g. Cu (preferably 0.05–0.1 g.) and at least 0.1 g. (preferably 0.5–1 g.) Mg, Al, or Ca per l. II. When II is used in bleaching fibrous materials (III), it is suitable to pretreat III with a soln. of I and then with II. The rise in activity of II is based on the fact that the quantity of ClO_2 normally developed corresponding to $4NaClO_2 + 2HCl \rightarrow 2ClO_2 + NaClO_3 + 3NaCl + H_2O$ is increased to 3 moles (from 4 moles $NaClO_2$) by the addn. of 0.1 g. Cu (as $CuSO_4$) or 0.5 g. Mg (as $MgSO_4$) per l. II ($NaClO_2$ content 3.618 g./l.) at pH 3.6 and 60°; or to 2.5 moles by the addn. of 1 g. Al [as $Al_2(SO_4)_3$] or 1 g. Ca (as $CaCl_2$) per l. II. A